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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,359	09/14/2005	Tomoyuki Hosokawa	01165.0945-00000	5444

7590 06/13/2007  
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EXAMINER
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MATZEK, MATTHEW D

ART UNIT	PAPER NUMBER
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1771

MAIL DATE	DELIVERY MODE
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06/13/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/549,359

Applicant(s)

HOSOKAWA ET AL.

Examiner

Matthew D. Matzek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☒ Claim(s) 11-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/06, 9/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

1. Claims 11-13 are objected to because of the following informalities: the term MFR is not defined in the claims. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perkins et al. (US 5,178,931) in view of Bansal et al. (US 6,548,431).

- a. Perkins et al. teach the creation of a nonwoven laminate comprising three layers, the first and third layers comprising filaments of diameter in excess of 7 microns and the second layer consists of filaments with average diameters between 0.1 to 10 microns.

The layers of the laminate are pattern bonded by the application of thermocompressive bonding (abstract). The first and third layers, which correspond to claimed second layer, may be made of polyester (col. 2, lines 56-63). The second layer may be made of a mixture of polyethylene or polypropylene and polyester (col. 5, lines 47-60). Perkins et al. fail to teach the quantity of each polymer to be used in the second layer.

- b. Bansal et al. teach a process for making a nonwoven sheet of melt spun fibers comprising at least 30 weight percent polyester having a viscosity less than 0.62 dl/g (abstract). The preferred viscosity of the polyester ranges from 0.40 to 0.60 dl/g (col. 2,

lines 37-48). The polyester may be blended with polyethylene (col. 3, lines 12-20).

Table 1 demonstrates that the invention of Bansal et al. have water pressure resistances (hydrostatic head) ranging from 3.73-4.12 kPa (conversion done by Examiner). The fibers of the nonwoven sheet are preferably at least 75 weight percent polyester (col. 11, lines 3-5) and at least one other separate polymer component. The polyester and the “at least one other separate polymer component”, polyethylene may be arranged in an ‘islands in the sea’ orientation with the element in greater concentration (polyester) being the “sea” and the polyethylene being the island component. This results in less than 25 weight percent polyethylene in the fibers of the nonwoven sheet. This is the same manufacturing process utilized by Applicant, which would also lead to the claimed discontinuous phase of the polyolefin resin scattered in the surface of the extremely fine fibers forming the extremely fine fibers nonwoven fabric. The meltspun fibers of Bansal et al. are on the same diameter scale as those of Perkins et al. (col. 4, lines 3-9). The basis weights of Bansal et al. exceed those required by the instant claims (Table 1). Adding the Grab Tensile strengths in the Machine and Cross Directions provided in Table 1 and divided this value yields tensile tenacities that exceed those claimed.

c. Since Perkins et al. and Bansal et al. are from the same field of endeavor (i.e. nonwoven fibrous structures), the purpose disclosed by Bansal et al. would have been recognized in the pertinent art of Perkins et al.

d. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the middle layer of Perkins et al. with the invention of Bansal et al. with the motivation of using a nonwoven sheet exhibiting high strength

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comprised of low denier fibers melt spun of low viscosity polyester (col. 8, line 66-col. 9, line 5) as disclosed by Bansal et al.

e. The melt flow rates of the polymers used in Perkins et al. and Bansal et al. are not disclosed. However, the viscosities of the polymers of Bansal et al. are taught and anticipate those currently claimed. Melt flow rates and inherent viscosities are closely correlated. Therefore, it would be reasonable to presume that the melt flow rates (MFRs) of Bansal et al. either anticipate those currently claimed or it would have been obvious to optimize the MFRs of Bansal et al. to arrive at those instantly claimed motivated by the desire to use a more easily processed polymer.

#### ***Information Disclosure Statement***

3. The references cited on the IDSs provided by Applicant have been considered. The references listed on the International Search Report have been considered, but do not adequately teach or suggest the instantly claimed invention.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew D. Matzek whose telephone number is 571.272.2423. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571.272.1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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